

AMENDMENT(S) TO THE SPECIFICATION

Page 1, after the title, please insert the following heading and paragraph:

--PRIORITY CLAIM

This is a U.S. national stage of application No. PCT/EP03/01775, filed on February 21, 2003.

Priority is claimed on that application and on the following application:

Country: Europe, Application No.: 02405154.2, Filed: March 1, 2002.--

Page 1, prior to line 4, please insert the following heading:

--BACKGROUND OF THE INVENTION--.

Page 2, beginning at line 7, please amend the paragraph as follows:

Using that process, therefore, it is possible to ~~realise~~ realize only limited radii and angles of curvature as a function of the diameter of the hollow section and the thickness of section wall.

Page 3, prior to line 7, please insert the following heading:

--SUMMARY OF THE INVENTION--.

Page 4, beginning at line 20, please amend the paragraph as follows:

The device is ~~characterised~~ characterized in that the HIP tool contains a slide element at the inner arc-shaped wall region of the bent starting hollow body, and the slide element can be displaced in the direction of the bend opening.

Page 3, beginning at line 24, please amend the paragraph as follows:

The starting hollow body i.e. the hollow body before the start of the bending and HIP process, is preferably a single or multi-chamber section, in particular a simple hollow section. The starting hollow body or starting hollow section is usefully of metal, preferably steel or ~~aluminium~~ aluminum or an ~~aluminium~~ aluminum alloy. The starting hollow section is to advantage in the form of a straight hollow section.

Page 3, beginning at line 36, please amend the paragraph as follows:

"Is readily bent" means that the wall material, by specific shape of the cross-section of the hollow section is as close as possible to the neutral plane with respect to bending stress - also ~~know~~ known as neutral stress plane - so that the smallest possible deformation forces, such as tensile and compressive forces, are applied to the wall material. This way a low polar moment of inertia is achieved. The neutral stress plane then runs through the middle line of the section. Consequently, the wall material of a cross-section that is readily bent is situated close to the middle line of the section.

Page 4, beginning at line 8, please amend the paragraph as follows:

Cross-sections that are readily bent are, therefore, ~~characterised~~ characterized by flat cross-sectional shapes with relatively large height to breadth ratios. Such shapes may e.g. be in the form of upright sections. Also, the cross-sectional shape may be elliptical or oval. Further, the cross-section of the hollow section may exhibit flanking walls bent inwards in the direction of the neutral stress plane e.g. in the form of dents or recesses by means of which a kind of tapering or necking is achieved, whereby the narrowest part of the necking preferably lies at the level of the section middle line. Such a cross-section which is favourable to bending may e.g. be in a form similar to that of an hour-glass, whereby the extent of narrowing at the middle can vary at will.

Page 5, beginning at line 19, please amend the paragraph as follows:

In the preferred version of the invention the ratio B of the average bending radius R_m to the tube outer diameter D ($B = R_m/D$) for tubes of metal, in particular ~~aluminium~~ aluminum or an ~~aluminium~~ aluminum alloy, lies in the range of: $0.5 \leq B \leq 2$, in particular in the range of $0.7 \leq B \leq 1$.

Page 6, beginning at line 35, please amend the paragraph as follows:

The slide element is to advantage introduced between ~~the~~ an upper and a lower tool half.

Page 7, beginning at line 21, please amend the paragraph as follows:

By optimal design of the slide element it is also possible to achieve the final cross-section of the hollow section in the first HIP forming step.

Page 8, prior to line 25, please insert the following heading:

--BRIEF DESCRIPTION OF THE DRAWINGS--.

Page 9, prior to line 4, please insert the following heading:

--DETAILED DESCRIPTION OF THE INVENTION--.

Page 9, beginning at line 32, please amend the paragraph as follows:

The bent starting hollow section 10a has an especially preferred readily bent cross-sectional shape which is ~~characterised~~ characterized by way of two mirror image recesses 13a,b, whereby the recesses 13a,b form a kind of necking in the middle. The mirror image arrangement relates to an axis 14 or plane running parallel to the bending axis. The bent starting hollow section 10a features an outer arc with outer arc wall region 11 and an inner arc with an inner arc wall region 12, whereby the inner and outer arc wall regions are usefully delimited with respect to each other by the neutral stress line or plane 14, 65 running parallel to the bending axis.

Page 10, beginning at line 15, please amend the paragraph as follows:

To carry out the second HIP process, the hollow section 10e is placed in a second HIP tool (Fig. 4a-c), which defines the final contour of both the inner and outer arc wall ~~region~~ regions. The outer arc wall region of the hollow section 10e has already been shaped to the contour of the final hollow section which is given by the tool cavity. Further, the inner arc wall region has already been expanded in the region of most pronounced curvature, approximately to the cross-sectional shape of the final hollow section (Fig. 4a). The hollow section 10e is now transformed by the action of the high internal pressure into the cross-sectional shape of the final hollow section 10g (Fig. 4b-c). For reasons of clarity only the lower half 32b of the HIP tool is shown schematically here.

Page 12, beginning at line 11, please amend the paragraph as follows:

Fig. 8 shows a graph 50 relating to applications for 90° bending of tube-shaped sections of a typical ~~aluminium~~ aluminum alloy, here as a function of tube diameter, bending radius and wall thickness.